

Comment Letter 0056 Continued

3.15 Biological Resources and Wetlands

Jurisdictional Waters

The data used to calculate the amount of jurisdictional waters resources within the buffer area was limited to the National Wetland Inventory maps and USGS topographic maps. It should be noted that different sources of data were used in the analysis of the various segments. For example, data sources used in the San Diego to Inland Empire segment included Thomas Brothers Guide maps and USFWS vernal pool maps.

National Wetlands Inventory Maps. The U.S. Fish and Wildlife Service USFWS created the NWI maps, which are provided on a USGS 7.5-minute quadrangle base. The metadata provided with the maps clearly states that the NWI does not show all wetlands or riparian areas since the maps are derived from aerial photo-interpretation of maps of varying scale and quality, and dated between 1971 to 1997. These aerial photos include older 1970s-era black and white photography at a scale of 1:80,000 and more recent color infrared photography. The maps are inventoried using different techniques depending upon the interpreter, and no field verification was conducted. The USFWS clearly states in the metadata that information provided by the NWI is limited and users should not rely solely on the NWI maps, but consult other information, such as soil survey reports and local and state government wetland information.

Additionally, 24 of the quadrangles that comprise the Los Angeles to Bakersfield study area were not available. Therefore, the final analysis does not include wetland data for approximately one-half of the study area. Although this statement is acknowledged by the EIR/EIS, this is a major concern with respect to the identification of wetland areas or potential wetland areas, particularly with respect to impact analysis.

USGS Topographic Maps. According to Appendix 3.15-C, a manual review of USGS topographic maps were used to calculate the linear feet length of perennial, intermittent, and ephemeral drainages within the study area. USGS maps are based upon information compiled in the 1960's and 1970's with some updates in the 1980's.

Reporting potential impacts to streambeds in linear feet is not appropriate since these impacts are permitted by resource agencies based upon acreage of impacts. The different streambed types were reported in the Technical Report, but not used in the EIR/EIS alternatives comparison table, which includes all streambed types as "non-wetland waters."

Because the NWI maps included any ponds, rivers, and lakes that were visible in the aerial photographs used, many of the waterbodies within the buffer areas are expected to have been counted twice in the

45

Proposed California High-Speed Rail Train System
August 20040056-14
cont.

3.15 Biological Resources and Wetlands

analysis. They would have been counted first in acre-feet from the NWI maps and then in linear feet from the USGS topographic maps.

In conclusion, the use of limited and unreliable data, the lack of field verification and surveys, and the use of inappropriate analysis of existing water resources and impacts on these resources are flaws of the EIR/EIS. This is an issue of significant concern, and it is important that the EIR/EIS address this issue fully and accurately in order to comply with CEQA.

3.15.1 Regulatory Requirements and Methods of Evaluation

B. Method of Evaluation of Impacts (page 3.15-1 and -2)

Wetlands were determined from NWI maps. The report admits that the information was incomplete in some areas, but does not specifically spell out where areas of deficiency occur. The document states that the collection of detailed information should be conducted at the next phase of analysis.

No field studies were completed and the potential existence of certain biological resources is based on database information. That means that if a resource were somewhere within a search area, the species or vegetation type would be represented in the data. This could over represent impacts in some areas if there is a high biological diversity in the area. The State Route 58 (SR-58)/Soledad Canyon Route is such an area with multiple zones that could or could not contain sensitive species.

The document states that "...the identification of a potential impact on a specific resource is intended to be conservative and in some instances may be an overstatement, because neither habitat that is sensitive or species of concern may be found in or near the footprint of the proposed corridor or actual alignment." (page 3.15-3) Again, the document recommends that this analysis be conducted at a later level of environmental review.

3.15.2 Affected Environment

The study area for the Interstate 5 (I-5) corridor is defined as 0.5 mile on either side of the highway and rail corridors and around stations (page 3.15-4). We presume this is for both the I-5 and SR-58 segments. This number potentially over-inflates impacts. It is impossible to tell if the overrepresentation is equal on both routes due to the different nature of the terrain and routes.

The use of a 0.5-mile "potential impact zone" may be appropriate for movement corridor analysis, but is excessive for potential impacts on specific vegetation types and plant or animal species. The document should provide justification for a 0.5-mile "potential impact zone" for special-status species and/or

46

Proposed California High-Speed Rail Train System
August 20040056-14
cont.

Comment Letter 0056 Continued

3.15 Biological Resources and Wetlands

habitats, particularly since the ROW alignment is known with specificity to the lead agency, which has detailed engineering drawings of the I-5 and SR-58 alignments.

3.15.4 Comparison of Alternatives by Region

C. Bakersfield to Los Angeles

The High-Speed Train Alignment Option Comparison states that the SR-58/Soledad Canyon route would have a slightly greater potential for impacts on biological resources than for the I-5 route. This determination appears to have been based upon the EIR/EIS's conclusions that the SR-58/Soledad Canyon alignment had a higher total number of special-status species (using inadequate data) and more linear feet of waters of the U.S. (inappropriately calculated) than the I-5 alternative. It was also based upon the assumption that the I-5 alignment contained more tunneling, thus fewer direct impacts on habitats, than the SR-58/Soledad Canyon alignment. The EIR/EIS states that special-status species include federal and state listed Threatened and Endangered species, Species of Special Concern, and CNPS 1B listed plants. As the names and status of these species are not provided, it is not possible to determine which alignment has the highest number of state and federally listed species. Threatened and Endangered species have a higher level of sensitivity and protection than Species of Special Concern and CNPS 1B listed plants. Also, the EIR/EIS and technical report understate the number of special-status plant and animal species associated with the I-5 alignment. There are several special-status species (e.g., Tejon poppy, Comanche Point layia, Fort Tejon woolly sunflower, Piute Mountains navarretia, blunt-nosed leopard lizard, California horned lizard, Tehachapi slender salamander, two-striped garter snake, burrowing owl, Cooper's hawk, golden eagle, prairie falcon, loggerhead shrike, willow flycatcher, and tri-colored blackbird) that are known to occur in the region of this alignment that were not addressed.

Based on the information provided, it is impossible to make any kind of meaningful comparison. On page 3.15-31 the document states that alignments could be adjusted to reduce impacts. This would be the case in most instances. The report also states that the broad range of information may not accurately correspond to actual field conditions.

The EIR/EIS concludes that more impacts to jurisdictional waters and wetlands would occur along the SR-58 Soledad Canyon route because the segments of the I-5 alignment that involved tunneling were assumed to avoid all impacts to jurisdictional waters and wetlands. However, potential impacts due to removal and deposition of large amounts of soil due to the tunneling, as well as the impacts due to dewatering, could occur. These potential impacts must be addressed in the EIR/EIS. The comparison of linear feet of potential streambed impacts is meaningless since impacts are reported in acres and the width of streambeds and riparian corridors differ significantly. Additionally, there is a huge unexplained

47

Proposed California High-Speed Rail Train System
August 2004

3.15 Biological Resources and Wetlands

disparity between the linear feet of non-wetland waters (streambeds) reported in the Biological Resources section and the linear feet of streams reported in the Hydrology and Water Resources section. However, both sections reference 1:24,000 scale (7.5 minute) USGS topographic maps as the source of data.

LEDPA for Waters of the U.S.

Because construction of the HST project will involve temporary and permanent fills in waters of the U.S., issuance of a permit under Section 404 of the Clean Water Act from the U.S. Army Corps of Engineers (Corps) will be required. In accordance with the Clean Water Act, the Corps "...cannot permit a discharge of dredged or fill material into waters of the U.S. if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." The least environmentally damaging practicable alternative is known as the LEDPA.

When an individual 404 authorization is requested from the Corps, the LEDPA is determined through the preparation of an alternatives analysis. The alternative analysis must "rigorously explore and objectively evaluate" all reasonable and practicable off- and on-site alternatives capable of achieving the purpose of the proposed activity. *Practicable* is defined by *cost, technical, and logistic factors*. The EIS/EIR should identify alternatives that would ultimately be consistent with the LEDPA that will be required by the Corps.

Additional Comments

Significance criteria for biological resources – One of the criteria stated in this section is, "Potential loss of a substantial number of any species that could affect the abundance or diversity of that species beyond the level of normal variability." This is a very ambiguous significance threshold; how is "normal variability" defined? What standard is being used?

Section C of 3.15.2, for the Bakersfield to Los Angeles segment, lists conservation plans that occur or would apply to this alignment. This section should be updated to include the Tejon Condor HCP that is currently in draft form. This HCP could be a constraint to the I-5 alignment.

Biological Resources and Wetlands Technical Report

Biological Resources General Comments

The specific starting point for the Bakersfield to Los Angeles Segment of the report does not start at the same location in Bakersfield for each of the three routes. The lack of a common start point could have a localized difference on effects in the Sacramento to Bakersfield Segment Studies.

48

Proposed California High-Speed Rail Train System
August 2004

Comment Letter 0056 Continued

3.15 Biological Resources and Wetlands

The Biological Resources section of the EIR/EIS compared the number of sensitive species that could occur within each alignment. Twenty-three (23) species were recorded for the SR-58/Soledad Canyon alignment and thirteen (13) to fourteen (14) species were recorded for the I-5 alignment, depending upon the segment chosen (Union Station or Wheeler Ridge). However, both of the alignments are divided into several segments that were analyzed separately in the Technical Report. This resulted in multiple counts of the same species for each alignment. When analyzed by alignment, the potential impacts to special-status species is summarized below:

	I-5 Alignment		SR-58/Soledad Canyon
	Union Station Segment	Wheeler Ridge Segment	
Special-Status Plants	5	3	11
Special-Status Wildlife	8	9	9
Total Number of Special-Status Species	13	12	20

The analysis of potential impacts to special-status species in the EIR/EIS is limited to a comparison of the total number of species, which as demonstrated above, is reduced when the entire alignments are compared rather than segments. However, a more suitable analysis would be a comparison of potential impacts to the most sensitive species, indicated by its state and federal status and the level of probability for it to occur. A species may be protected at different levels at the state and federal level, or more commonly, included on the CNPS list, simultaneously. Therefore, the table below includes a count based upon the highest level of protection granted for each species.

	I-5 Alignment		SR-58/Soledad Canyon
	Union Station Segment	Wheeler Ridge Segment	
Federal or State Threatened or Endangered Species	9	8	10
Federal or State Species of Special Concern	4	4	7
CNPS List 1 Plant Species	0	0	2
CNPS List 3 Plant Species	0	0	1

It should be noted that one plant species, Parry's spine flower, included in the SR-58/Soledad Canyon alignment is only included on the CNPS List 3 species (page 27). This designation indicates that CNPS needs more information on the plant. Therefore, it may not be appropriate to include this species in the list.

The Technical Report includes the type of habitat and elevations associated with each species and their potential to occur within the alignment from low to high. The potential to occur was based upon records

49

Proposed California High-Speed Rail Train System
August 2004

3.15 Biological Resources and Wetlands

of occurrence in the CNDDDB and CNPS databases and occurrence of suitable vegetation based upon the CNDDDB Gap Analysis maps. These records often consisted of undated herbarium records that ranged from the 1920's to the mid-1990s. More recent information provided by the CNPS online inventory indicates that many historic occurrences of Bakersfield small-scale, Bakersfield cactus, Lancaster milk vetch, San Joaquin woolly threads, and San Fernando Valley spine flower have been extirpated. No fieldwork was conducted to confirm that suitable soils, vegetation, or other habitat constituents exist for these or other species. Additionally, the elevations at each segment of the alignment were not compared to the elevational range associated with each species, as is common with biological reviews to determine the potential occurrence of plant species.

Several of the discussions of special-status plant and wildlife species indicate that no records occur of that species in the project vicinity. However, recent surveys for other projects indicate that several of these species occur or potentially occur within the .5-mile study area of the alignment paralleling I-5. These species include include Tejon poppy, Comanche Point layia, Fort Tejon woolly sunflower, and Piute Mountains navarretia (plants), and blunt-nosed leopard lizard, California horned lizard, Tehachapi slender salamander, two-striped garter snake, burrowing owl, Cooper's hawk, golden eagle, prairie falcon, loggerhead shrike, willow flycatcher, and tri-colored blackbird (wildlife). These species should have been disclosed in the EIR/EIS as potentially occurring and likely would have been observed if appropriate surveys had been conducted. The impact section will also need to be modified to reflect this information.

Section 2.4.6 Wildlife Movement/Migration Corridors

Please see comments above for the EIR/EIS regarding the use of the Missing Linkages report that apply to this section as well.

The alignment daylights above the ground near Tejon Lake. Potential direct and indirect impacts on the lake and its associated biological resources need to be more accurately disclosed. In addition, in those locations where the alignment is above ground, the presence of chain-link or other fencing (bordering both sides of the tracks) that is designed as a safety measure to exclude debris, animals, and people would essentially serve as a barrier to wildlife movement. This is especially true in the San Joaquin Valley portion of the alignment, particularly between the California Aqueduct and where it disappears underground partially up Grapevine Peak, where this fencing and the berm upon which the track rests in this location, will effectively block movement by the endangered San Joaquin kit fox and blunt-nosed leopard lizard, and a number of more common terrestrial species. According to engineering drawings prepared by the lead agency but not disclosed in the EIR/EIS, the berm extends to 250 feet high at the Grapevine interchange. This height would require a width at the base that would preclude any mitigation

50

Proposed California High-Speed Rail Train System
August 2004

Comment Letter 0056 Continued

3.15 Biological Resources and Wetlands

of this impact. In the Tehachapi Mountains near Tejon Lake, the alignment is again above ground and would block east/west movement by wildlife species. The underpass at the I-5/Highway 138 intersection, which is essentially the only viable crossing point for wildlife on the south side of Tejon Pass in this area, would also be blocked by the alignment. The EIR/EIS does not adequately disclose impacts on wildlife movement in these areas.

Section 3.2 Significance Criteria for Biological Resources

The criteria used here are not consistent with those used in the EIR/EIS.

Section 3.3 Impacts Assessment

The technical document states (p.63):

"Where feasible, construction type was factored into the impacts assessment. Because the segment type and construction type occurred in two separate GIS layers, it was not possible to conduct the impacts analysis on both segment and construction type. That is, we could quantify impacts of each segment or each construction type from Bakersfield-to-Los Angeles, but not both. To remedy this situation, biological resources from the CNDDB were overlain on construction type to determine which of these resources occurred in tunnel and noting which construction segment or segments the tunnel areas corresponded to. Then, for a given segment, if all occurrences of a particular resource (sensitive plant community, for example) were only identified within tunnel areas, then impacts to this resource were assumed to be non-existent. If some occurrences of a particular resource were identified in tunnel areas and some in areas of a different construction type (cut and fill, for example), then qualifying statements were added to Section 4.0 identifying that impacts to the resource would be reduced due to tunneling where some of these resources were located. Acreages of plant communities occurring within tunnel sections for a given segment were estimated by taking the fraction of the acreage of the plant community polygon occurring within the tunnel segment. However, this was not done for jurisdictional waters and wetlands due to the nature of the database. For the purposes of this analysis, it was assumed that tunneling would not result in impacts to biological resources within tunnel sections because the tunnel will be lined and sealed as construction with a tunnel-boring machine takes place, with no impacts on groundwater levels and no potential for dewatering impacts on surface resources. Some surface disturbance associated with tunnel portal construction would occur, but this disturbance would only occur for a minimal distance (approximately 100 feet, for instance) at the beginning and end of the tunnel sections."

How does this take into account the roads leading to tunnel segments, the portal areas which we presume are wider than the construction ROW, and the spoils from tunneling? This could be a significant issue when comparing the greater length of tunneling associated with the I-5 Tehachapi Corridor as compared with the SR-58/Soledad Corridor. The disposition of spoils from tunneling is a significant concern with respect to biological resources and must be addressed.

The report states, "For the purposes of this analysis, it was assumed that tunneling would not result in impacts to biological resources within tunnel sections because the tunnel will be lined and sealed as construction with a tunnel boring machine takes place, with no impacts on groundwater levels and no potential for dewatering impacts on surface resources." (page 63). This is a huge assumption to make,

51

Proposed California High-Speed Rail Train System
August 2004

3.15 Biological Resources and Wetlands

particularly when considering the results of some of the studies for tunneling under the Cleveland National Forest associated with the MWD Inland Feeder tunneling project. Any such assumption must be validated.

Section 4.2 Modal Alternative

A number of additional special-status plant and animal species need to be added to the lists in this section of various species affected by the differing alignment segments. Most notably, impacts on several bird species (burrowing owl, Cooper's hawk, golden eagle, prairie falcon, tricolored blackbird) are missing. Summary section, 4.2.3, will consequently need to be updated.

0056-14
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0056-14
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52

Proposed California High-Speed Rail Train System
August 2004

Comment Letter O056 Continued

SECTION 3.17 - CUMULATIVE IMPACTS EVALUATION

This section provides only a superficial discussion of cumulative impacts for the Systems Alternatives, and does not differentiate on the cumulative impacts of the HST alignment alternatives. Appendix 3.17a provides information on cumulative projects for the SR-58 corridor, but nothing for any of the other alignments between Bakersfield and Los Angeles. Consequently, the EIR/EIS is in violation of Section 15130(b)(1)(A) of the CEQA Guidelines:

"A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or

(B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact."

The method utilized within the EIR/EIS is the list method and must delineate which projects should be considered from a cumulative perspective for each segment.

Page 3.17-1 (4th paragraph): states that the projects considered for the cumulative analysis are primarily transportation related but do include major projects such as the University of California (UC) at Merced campus. This paragraph further indicates that all projects included within the analysis are listed in Appendix 3.17A. The list of cumulative projects should not be confined to transportation projects. Other projects, even those not as large scale as a university campus, could easily produce transportation impacts to the circulation system and air quality impacts to the basin. To not include all projects would be contrary the direction provided by the CEQA Guidelines Section 15130(b)(1)(A): "A list of past, present, and probably future projects producing related or cumulative impacts..." This is an issue of significant concern, and it is important that the EIR/EIS address this issue fully and accurately in order to comply with CEQA.

Page 3.17-3 (5th paragraph): "Implementation of the proposed HST Alternative would result in high potential noise impacts along approximately 8 mi to 133 mi (13 km to 214 km) of alignment, depending on the alignment options selected. These potential impacts, when combined with the potential noise impacts of other highway, roadway and transit expansion projects in the region, would contribute to localized potential cumulative noise impacts during construction and operation." This generalized summation of impacts is not specific and dismisses potential impacts summarily with no substantiation. The EIR/EIS includes no specific discussion of I-5 alignment impacts to projects such as Tejon Industrial Complex East or Centennial. Potential cumulative noise and vibration, air, energy, aesthetics, biological, and traffic impacts could impact both projects due to the I-5 alignment and there is no discussion of impacts. Both of these projects have been discussed for several years and are in process within the

53

Proposed California High-Speed Rail Train System
August 2004

3.17 Cumulative Impacts Evaluation

County of Kern and County of Los Angeles, respectively. These conclusions are supported with no facts or figures to make this conclusion. Supporting documentation must be provided in order to support these allegations.

Contrary to the intent of CEQA Guidelines 15168(b)(2), the Program EIR does not reflect a thorough consideration of cumulative effects associated with the HST alignment alternatives. The section should clearly delineate the cumulative impacts to each HST alignment. "Combining" HST cumulative alignment impacts into one discussion provides the decision makers with no real means of identifying potential impacts associated with each of the alternative alignments. Consequently no valid conclusions can be made with regard to the cumulative impacts of the alternative HST alignments. The cumulative impact analysis as proposed is inadequate and must be revised to include all projects that may create combined impacts when considered in conjunction with each of the proposed HST alignment alternatives. This is particularly true with regard to geology, biological resources, and aesthetics.

Page 3.17-5 (last paragraph): There are no cumulative conclusions made with regard to the HST alternative alignments with regard to agricultural lands. As discussed in Section 3.8 Agricultural Lands above and in Section 5.0 Growth Inducing Impacts below, there is the high probability for the HST to induce population growth in Bakersfield, because of the faster and cheaper commute it would make possible between less expensive housing there and employment centers in Los Angeles County. The cumulative effects of growth pressures on the conversion of agricultural lands to residential and other supporting land uses were not analyzed in the EIR/EIS. Consequently, the EIR/EIS must be revised to include discussion regarding cumulative impacts to agricultural lands.

Page 3.17-6 (4th paragraph, last sentence): "Thus the HST Alternative could contribute to construction-related cumulative impacts on visual resources." The EIR/EIS needs to be clear on whether the HST alignments would or would not have cumulative aesthetic and visual resource impacts. There will be significant visual impacts with the I-5 alignment. Grading, tunneling, above ground visual impacts that would not only result in construction impacts, but would also result in permanent impacts and would consequently create operational impacts. At what point does the construction become significant? The EIR/EIS provides no rational or definitive conclusions. All conclusions must be substantiated and consequently this section must be revised.

Page 3.17-8 (3rd paragraph): Discussion of each HST alignment is crucial in order to determine specifically where the cumulative geology impacts may occur with regard to impacts associated with tunneling. The HST alignment alternatives would have substantially different impacts with regard to tunneling impacts. To combine these impacts together does not give the decision makers a clear picture of where, or in which alignment, the geological impacts would occur.

54

Proposed California High-Speed Rail Train System
August 2004

O056-15

O056-15
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U.S. Department
of Transportation
**Federal Railroad
Administration**

Comment Letter 0056 Continued

SECTION 5 – INDUCED GROWTH

This section of the Draft Program EIR/EIS addresses the extent of potential statewide, regional and certain local growth effects of the HST and Modal Alternative in terms of population and employment change and land consumption associated with these changes. It focuses primarily on analysis of very large geographic areas (subregions and counties), and differences in percentages of growth between the HST and Modal Alternative, as compared with the No-Project Alternative, both of which mask important sub-county absolute growth and HST station-specific issues. The analysis also fails to analyze important segments of the proposed HST system that cross its subregional definitions, such as the Los Angeles-Bakersfield Segment, whose end points are located in different analysis subregions (Southern California and South Central Valley, respectively) and counties (Los Angeles and Kern, respectively). As a result, this section does not fulfill the requirements under CEQA and NEPA that the induced growth section analyze and disclose the degree to which the project directly or indirectly fosters population, household, housing and employment or other indicators of economic growth, removes obstacles to growth or taxes community service facilities to the extent that would cause construction of new facilities, or encourages or facilitates other activities that cause significant environmental impacts. This is an issue of significant concern, and it is important that the EIR/EIS address this issue fully and accurately in order to comply with CEQA.

Section 5.3 – Potential Growth-Inducing Effects

The induced growth section appears to be based largely on analysis contained in a technical report cited in the section and numerous tables as “Cambridge Systematics, Inc., 2003.” Though this document is listed in the references, it was not included among the Draft EIR/EIS technical reports made available for public review. The fact that it was not included among the voluminous published Draft EIR/EIS documents prevents members of the public and decision makers from performing a complete review of the Draft EIR/EIS, contrary to the requirements of CEQA and NEPA. This is an issue of significant concern, and it is important that the EIR/EIS address this issue fully and accurately in order to comply with CEQA.

The induced growth impacts analysis is based on a projection of total, statewide economic impacts (measured in terms of population and employment growth) due to the HST, Modal Alternative, and No-Project Alternative. The projection involved estimating, first, the direct transportation benefits of each alternative, measured in terms of business cost savings, business attraction effects and quality of life changes, and then deriving the total impacts of the direct effects from an econometric model (i.e., the sum of direct, indirect and induced changes in population and employment by industry). These statewide total impacts were then allocated to counties. Estimates were then made of the land required to absorb

55

Proposed California High-Speed Rail Train System
August 2004

0056-16

the projected numbers of people and jobs in each county that would be associated with each alternative. The county-level analysis was then regrouped into each of five distinct subregions (i.e., Bay Area, North Central Valley, South Central Valley, Southern California and Rest of California).

Though it apparently relies on a very sophisticated set of integrated modeling techniques, the analysis is conducted using geographic scales that mask potentially important impacts that cross its system of subregional areas and counties. For example, the end points of the Los Angeles-Bakersfield Segment (i.e., Sylmar and Bakersfield) are located in counties (i.e., Los Angeles and Kern, respectively) which are in two separate analysis subregions (Southern California and South Central Valley, respectively), and there is no analysis of induced growth across subregions. Thus, prospects for the HST to induce population growth in Bakersfield, because of the faster and cheaper commute it would make possible between less expensive housing there and employment centers in Los Angeles County, is not explicitly considered in the induced growth analysis. Similar limitations apply to the relationships between the Bay Area subregion and its constituent counties and the North Central Valley and its counties, where similar home price disparities versus employment center location relationships now exist and can be expected to worsen over time.

This significant growth-inducing issue received only scant attention at page 5-17 of the Draft EIR/EIS, consisting of a conclusory statement that analysis suggests that “...the additional population growth under the HST Alternative is driven by internal growth...related to initiation of HST service, rather than potential population shifts from the Bay Area and Southern California accompanied by long-distance commuting.” No analysis or other evidence leading to this “suggestion” is included in the Draft EIR/EIS. Nor does it include any analysis or evidence to support a claimed “stronger propensity” for population redistribution from Sacramento and San Joaquin Counties to “lower-cost and better-positioned (for HST service) housing” in Merced and Stanislaus Counties.

The urbanization analysis relies on urban land cover data provided by the California Farmland Mapping and Monitoring Program (CFMMP). Review of the Agricultural Lands section of the Draft EIR/EIS (Section 3.8) indicates, however, that areas south and west of Bakersfield are not included in the CFMMP, so it is not clear on what basis the induced growth section reached any conclusions about urbanization, which is a critical analytic component of its assessment of impacts of the HST alignment options for the Bakersfield-Los Angeles Segment.

The Draft EIR/EIS includes only general, conclusory statements that the various HST alignment options result in very similar growth-inducing impacts, without presenting the factual basis for the conclusion. Only a footnote (p. 5-21) mentions a difference in the Antelope Valley from the alignment that includes a station in Palmdale, and that result is much higher population (25,000 people) than jobs (15,000), which raises further questions about the earlier conclusion that the HSR alternative will not cause much of an

56

Proposed California High-Speed Rail Train System
August 2004

0056-16
cont.

Comment Letter 0056 Continued*5.0 Induced Growth*

effect due to easier and less expensive access between major job centers (e.g., Los Angeles County) and areas with considerably less expensive housing (e.g., Bakersfield and the Antelope Valley).

The final subsection of the induced growth section discusses, in a very general way, potential indirect impacts on the physical environment that are related to incremental population and employment growth associated with the Modal and HST Alternatives. Given the section's use of very large geographic areas in the analysis, and impact quantification that is limited primarily to small percentage differences in population and employment implied by the HST and Modal Alternatives, as compared with the No-Project Alternative, it is not surprising that the analysis finds little prospect for indirect environmental impacts.

The discussion does acknowledge, however, that while the statewide and regional effects may differ only slightly, the localized effects at HST stations (for the HST Alternative) and interchanges or airports (for the Modal Alternative) could be larger than under the No-Project Alternative. This point is acknowledged again in a few of the subsections on specific environmental topics (e.g., direct and indirect air quality effects could be larger around station areas; development pressures associated with HST Alternative would be concentrated in industry sectors that tend to locate near stations), but no analysis is included. The lack of station-specific analysis is excused as inapplicable to a program-level environmental document. Given the admission that local growth-inducing impacts could differ significantly from system-wide impacts, it would have been reasonable for the induced growth analysis to include a general review of these issues for a representative sample of stations, most of which have already been identified, at least within clusters of candidate locations.

This concern that important information about potential growth-inducing impacts associated with HST stations has been impermissibly avoided in the Draft EIR/EIS is underscored by the subsection on "avoidance and minimization strategies." This subsection summarizes research conducted about development patterns around HST systems elsewhere in North America, Europe and Asia. Though none of that research is included in the published Draft EIR/EIS, the summary of it in the growth-inducement section clearly indicates that development is likely to concentrate around station sites; therefore, the induced growth effects of the HST Alternative are likely to be concentrated there. While this research may help support the Draft EIR/EIS conclusion that an HST Alternative would not cause significant conversion of non-urbanized land to urbanized uses, it served to further emphasize the significance of any station-level impact analysis.

O056-16
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Response to Comments of Susan Tebo, Associate Principal, Impact Sciences, August 30, 2004 (Letter O056)**O056-1**

For the Program EIR/EIS the traffic analysis has been completed at a regional level of detail based on regional modeling data. Should the HST program move forward, detailed intersection level traffic analysis will be part of subsequent project specific analysis. Should the HST proposal move forward, the Authority and the FRA will work closely with local and regional agencies as well as other stakeholders to ensure consistency with City traffic impact guidelines and to ensure that adequate access improvements are identified to minimize and mitigate potential traffic impacts. Please also see standard response 3.17.1.

O056-2

Only system alternatives were addressed, not route alignments. The route options used in the evaluation were not provided.

Changes in emissions generated within the appropriate air basins under the proposed project alternatives were estimated using projected changes in vehicular, train and bus miles of travel. The purpose of this analysis was to provide for alternative comparison purposes an indication of how the alternatives would affect the amounts of emissions generated in each basin. The level of detail in these analyses would not be sufficient to further refine these projections to estimate changes within each basin from various route options under each alternative. In addition, it is not anticipated that the route options within a basin would significantly affect the overall changes in the amounts of emissions generated within the basin.

Baseline conditions did not include hydrogen sulfides, vinyl chlorides, or visibility.

Analyses were conducted for the pollutants that would be most affected by the project alternatives. As the alternatives would not be expected to significantly affect hydrogen sulfide or vinyl chloride emissions or visibility conditions, and therefore these factors would

not provide a distinction between the alternatives, these items were not addressed.

Specific levels of nonattainment (e.g., moderate, serious, severe, extreme) were not provided.

Although the specific levels of nonattainment were not provided in the Draft Program EIR/EIS, the specific General Conformity significant impact levels for each air basin, which are based on these levels, were used to determine whether the proposed action would cause low adverse air quality impacts (i.e., estimated increases in emissions that are less than the significant impact levels) or medium adverse air quality impacts (i.e., estimated increases in emissions that are greater than the significant impact levels but less than 10 percent of the total emissions generated in the basin). No alternative was estimated to result in high adverse air quality impacts (i.e., estimated increases in emissions that are greater than 10 percent of the total emissions generated in the basin). These results are provided in Tables 3.3-9 and 3.3-13. Specific levels of nonattainment will be provided in the Final Program EIR/EIS.

Hazardous air pollutants (HAPS) were not addressed.

HAP emission rates from the affected transportation emission sources (i.e., motor vehicles, trains, and planes) are related in changes in hydrocarbon emission rates. Relative changes in HAP emissions in each basin from the project alternatives can therefore be estimated from the changes in hydrocarbon emissions provided in the document.

Detailed information on the data used in the analysis was not provided.

Detailed information on the methodologies, assumptions, and emission factor sources are provided in the Air Quality Technical Evaluation Report.

Inconsistent terminologies were used for certain pollutant types (e.g., HCs versus VOCs). Also, HC and NOx were presented as greenhouse gases

There are some inconsistencies in the text, where HC is discussed in some sections, TOG in other sections, and ROG in still other sections. However, Section 3.3-2B includes an accurate discussion of these terms, where it is stated that “hydrocarbons (HC) comprise a wide variety of organic compounds, including methane (CH₄). Hydrocarbons are classified according to their level of photochemical reactivity: relatively reactive or relatively non-reactive. Non-reactive hydrocarbons consist mostly of methane. Emissions of total organic gases (TOG) and reactive organic gases (ROG) are two classes of hydrocarbons measured for California’s emission inventory. TOG includes all hydrocarbons, both reactive and non-reactive. In contrast, ROG includes only the reactive HC.”

The text will be updated for the Final Program EIR/EIS to so that HC and TOG, which are same, will be addressed consistently. The text will also be updated to reflect that fact that methane (as opposed to HCs) and nitrous oxide (as opposed to nitrogen oxides) are greenhouse gases. Neither change will affect the results of the air quality analysis.

The methodology used to estimate on-road emission burdens not clear.

Detailed information on the methodologies, assumptions, and emission factor sources are provided in the Air Quality Technical Evaluation Report.

Detailed microscale analyses were not conducted even though the necessary information was available.

While a great deal of traffic data were developed for the programmatic Draft Program EIR/EIS, not enough site specific data was available to conduct a detailed microscale analysis for all of the affected intersection within each air basin. Detailed designs and entry/exit points for all of the affected parking facilities would be required, as well as the localized roadway geometries and traffic

conditions (e.g., signal timing, volumes, vehicles mixes, etc) at all of major roadways affected by the project alternatives. A great deal of additional information is also required to properly select the appropriate mobile source analysis sites using procedures established by the USEPA and CALTRANS. These analyses will be appropriate during project level review which more detail is available concerning specific alignments and facility design.

Construction phase impacts not addressed.

The detailed information necessary to conduct a quantitative construction phase analysis is not available for this program-level review. Information such as the years of construction operations at each analysis site, the types of equipment and hours of equipment operating at each site, the location of this equipment relative to nearby sensitive land uses, the number of trucks entering, leaving, and idling near site, the mitigation measures that may be required or proposed at specific sites be specified in enough detail to conduct a quantitative analysis in future environmental studies.

Significant levels were not established and significance findings of alternatives were not provided.

The General Conformity significant impact levels were used to determine significant impact levels. These values were used to determine whether the proposed action would cause low adverse air quality impacts (i.e., estimated increases in emissions that are less than the significant impact levels) or medium adverse air quality impacts (i.e., estimated increases in emissions that are greater than the significant impact levels but less than 10 percent of the total emissions generated in the basin). No alternative was estimated to result in high adverse air quality impacts (i.e., estimated increases in emissions that are greater than 10 percent of the total emissions generated in the basin). These results are provided in Tables 3.3-9 and 3.3-13.

O056-3

The screening procedure provides distances from the center of a corridor to define an area enclosed by parallel contours. However,

noise and vibration impact criteria relate to the number of people who are likely to be annoyed by activity interference. The areas defined by the screening distances along the alignments, together with available US census based population density information in GIS format, provide a measure of the number of people potentially impacted by HST and the other alternatives. A tabulation of people alone is not the only indicator for noise and vibration impacts – noise-sensitive institutional and multi-family land uses must also be factored in to the assessment. This information is provided in the regional technical reports. Future project level analysis would provide detailed inventories of sensitive land uses.

At the program level, however, a more general rating system is appropriate in order to compare the potential severity of noise and vibration impacts and the need for mitigation among system alternatives and alternative HST corridors. The impact rating methodology provides a comparison of the lengths of corridor where mitigation may be required. This analytic approach provides information sufficient to estimate the relative potential for noise impact as well as potential mitigation costs associated with each alignment option being compared.

For the Program EIR/EIS the assessment of noise impact used equivalent noise criteria for each transportation mode as established by the responsible US DOT modal agency. As applied in the programmatic noise analysis, potential noise impact was be the population within the screening distance for the HST; for airports, it was be the population within the DNL=65 dBA contour; and for highways, it was be the population within the Peak Hour Leq = 67 dBA contour.

O056-4

The differences in HST system energy requirements among the HST alignments would be negligible and would not help differentiate among the options. Therefore, the energy analysis was performed for a representative HST Alternative and described in this Program EIR/EIS. Please see standard response 3.15.13 regarding the intended uses of this Program EIR/EIS. Based on the information in

the Program EIR/EIS and the public comments on this document, the Authority has identified the SR-58/Soledad Canyon alignment option as preferred for the Bakersfield to Los Angeles segment. Please see standard response 3.15.11 regarding this decision.

O056-5

Overall, it can be expected that the HST Alternative would introduce additional EMF exposures or EMI at levels for which there are no established adverse impacts on humans or wildlife. EMF emissions from HST vehicle passby's are very low, and impacts are therefore not expected to be significant. Any potential EMF/EMI impacts will be identified and appropriate mitigations identified in the subsequent project level environmental review, as summarized in the Program EIR/EIS in Section 3.6.4 and 3.6.5. The mitigations suggested at this program level are strategies that will only apply if related impacts are identified.

O056-6

Regional and local land use plans were reviewed for areas through which the Modal Alternative and the HST alignments would pass. These plans were used to create a geo-spatial database for evaluation of possible land use impacts (Section 3.7). Consistency with local plans was evaluated during preparation of the regional technical studies. These technical studies (and screening reports) for each of the five regions were made available on the California High Speed Rail Authority website:

(http://www.cahighspeedrail.ca.gov/eir/regional_studies/default.asp) and the Final Program EIR/EIS incorporates these technical studies by reference. The technical studies applied the commentor's criteria of evaluation. Review of site-specific zoning along the multiple Modal and HST alignments was well beyond the scope of this Program EIR/EIS. The Co-lead agencies worked closely with multiple state and federal agencies (including those identified in the comment) regarding the overall structure and analytic approach for the Program EIR/EIS. Please see standard response 3.15.10 for more information on how habitat conservation plans have been and

will continue to be addressed in the planning and environmental process. The Co-lead agencies believe that the environmental justice analysis prepared for the Program EIR/EIS is appropriate and sufficient for the intended purposes of the Program EIR/EIS. The basis for evaluating environmental justice impacts is outlined on pages 3.7-4 and 3.7-5 of the Program EIR/EIS. The State has not prescribed specific procedures in CEQA documents. Based on the information in the Program EIR/EIS and the public comments on this document, the Authority has identified the SR-58/Soledad Canyon alignment option as preferred for the Bakersfield to Los Angeles segment. Please see standard response 3.15.12 regarding this decision. The Co-lead agencies believe that the Program EIR/EIS does provide sufficient information to decide whether to advance the high speed train system and whether to eliminate some and identify other proposed corridor alignments (e.g. the I-5 alignment between Bakersfield and Los Angeles) for further study. Please see standard response 3.15.13 for more information on the use of the Program EIR/EIS. The Table of Contents, section divider, and section heading all contain a common title: "Land Use and Planning, Communities and Neighborhoods, Property, and Environmental Justice" in the Draft and Final Program EIR/EIS. Land use compatibility determinations were based on computer-generated data developed for the multiple Modal and HST alignments. The data is available upon request.

Specific Comments

p. 3.7-1: Comment regarding p. 3.7-1 has been incorporated into the Final Program EIR/EIS.

p. 3.7-5: The Co-lead agencies believe that the environmental justice analysis prepared for the Program EIR/EIS is appropriate and sufficient for the intended purposes of the Program EIR/EIS. The basis for evaluating environmental justice impacts is outlined on pages 3.7-4 and 3.7-5 of the Program EIR/EIS. Please see response to O044 – 18 regarding the environmental justice evaluation.

Figures 3.7-3 and 3.7-5: Data in response to these specific comments have been incorporated into the Final Program EIR/EIS.

Table 3.7-1: Multifamily residential is a factor in both medium and high compatibility impact categories, but at different densities. The medium compatibility impact category includes multifamily densities up to 18 units per acre and the high compatibility impact category includes densities above 18 units per acre.

p. 3.7-8: Information from the comment has been incorporated into the Final Program EIR-EIS.

p. 3.7-11: While the improvements are programmed and funded, they are not all at the same stage of project development. The environmental processes for many of the projects have not been completed and are therefore not it would be speculation to try to identify specific impacts. In addition, the No-Project improvements are relatively small in scope when compared to the improvements proposed in the System Alternatives (HST and Modal) and are incorporated into the system alternatives as part of the future no project condition.

p.3.7-12: The Co-lead agencies believe that the environmental justice analysis prepared for the Program EIR/EIS is appropriate and sufficient for the intended purposes of the Program EIR/EIS. The basis for evaluating environmental justice impacts is outlined on pages 3.7-4 and 3.7-5 of the Program EIR/EIS. Please see response to O044 – 18 regarding the environmental justice evaluation.

Land Use Compatibility: The statement is referring to the alignment options identified in your comment.

p. 3.7-19: Potential review of site-specific zoning along the multiple Modal and HST alignments was well beyond the scope of this Program EIR/EIS.

Property-HST Alternative: Section 3.7-4 C. Property/HST Alternative states the route miles and percentages of High impact that are shown on Figure 3.7-12.

Environmental Justice: Land use compatibility determinations were based on computer-generated data developed for the multiple Modal and HST alignments. The SR-58 option refers to the portion of the

SR 58/Soledad Canyon alignment option that generally follows the SR 58 corridor through the Tehachapi Mountain crossing and into Bakersfield. No conflict is apparent in the comparisons. The Authority can provide the data for the specified segments to the commentor upon request, if desired.

Mitigation Strategies – Land Use Compatibility: In the Final Program EIR/EIS, each environmental area (sections of Chapter 3) has been modified to include mitigation strategies that would be applied during project level environmental review to the HST Alternative. Each section of Chapter 3 also outlines specific design features that will be applied to the implementation of the HST system to avoid, minimize, and mitigate potential impacts.

Mitigation Strategies – Environmental Justice: The Co-lead agencies believe that the environmental justice analysis prepared for the Program EIR/EIS is appropriate and sufficient for the intended purposes of the Program EIR/EIS. The basis for evaluating environmental justice impacts is outlined on pages 3.7-4 and 3.7-5 of the Program EIR/EIS. Please see response to O044 – 18 regarding the environmental justice evaluation. Environmental justice issues will be further addressed in project specific analyses when more information concerning specific alignments and facilities design options will be available.

O056-7

Use of the Land Evaluation and Site Assessment (LESA) model will be considered during project level environmental review. Parcel specific analysis would be conducted at the subsequent project level of environmental review.

The program level analysis is focused on identifying, avoiding and minimizing potential direct impacts and thus minimizing any associated indirect impacts. Potential indirect impacts will be addressed during the project level environmental review when sufficient detail is available regarding specific alignment location and facilities placement. Growth inducing impacts are discussed in Chapter 5, Section 5.2. See also Standard Response 5.2.1.

Figure 3.8-11 has been correctly identified in the List of Figures in the Final Program EIR/EIS.

In the Final Program EIR/EIS, each environmental area (sections of Chapter 3) has been modified to include mitigation strategies that would apply in general to the HST system. Each section of Chapter 3 also outlines specific design methods and features that will be applied to the implementation of the HST system to avoid, minimize, and mitigate potential impacts.

The detail of engineering associated with the project level environmental analysis will allow further investigation of ways to avoid, minimize and mitigate potential impacts to agricultural resources. Only after the alignment is refined and the facilities are fully defined through project level analysis, and avoidance and minimization efforts have been exhausted, will specific impacts and mitigation measures be addressed.

O056-8

The Program EIR/EIS (Section 3.9.2 C.) characterizes the I-5 corridor through the Tehachapi Mountains as “highly scenic mountain range (natural open space) through the Tehachapi Mountains and Angeles National Forest”. It also identifies scenic routes, scenic overlooks and viewpoints along the route. Table 3.9-1 also identifies potential high-contrast impacts of the HST alignment option along I-5 at the recreation areas and viewpoints.

Visual impacts are highly site-specific in nature. These issues will be addressed during subsequent project level environmental review, based on more precise information regarding location and design and construction of the facilities proposed (e.g., elevated, at-grade, catenary design features, fencing type and location, construction staging areas, construction equipment required, etc.). The detail of engineering associated with the project level environmental analysis will allow the Authority to further investigate ways to avoid, minimize and mitigate potential visual affects. Only after the alignment is refined and the facilities are fully defined through project level analysis, and avoidance and minimization efforts have been

exhausted, will specific impacts and mitigation measures be addressed.

The visual simulation depicted in Figure 3.9-18B is representative of potential visual impacts related to large cut and fill slopes. This figure represents potential visual effects in typical fashion of all alignment options with cut and fill slopes.

0056-9

Based on the information in the Program EIR/EIS and the public comments on this document, the Authority has identified the SR-58/Soledad Canyon alignment option as preferred for the Bakersfield to Los Angeles segment. Please see standard response 3.15.12 regarding this decision.

0056-10

Hazardous materials impacts are highly site-specific in nature. These issues will be addressed during subsequent project level environmental review, based on more precise information regarding location and design of the facilities proposed and the construction and operation activities that are likely to occur near any potentially impacted sites. The detail of engineering associated with the project level environmental analysis will allow the Authority to further investigate ways to avoid, minimize and mitigate potential impacts. Only after the alignment is refined, the facilities are fully defined through project level analysis, construction and operational plans are refined, and avoidance and minimization efforts have been exhausted, will specific impacts and mitigation measures be addressed. Hazardous materials used in operation, maintenance, and construction of the proposed system would be defined and addressed at the subsequent project specific level of analysis.

The program-level analysis does not include a detailed assessment of the nature or extent of any hazardous materials or wastes that may be present at identified sites, or the degree or specific nature of potential impacts under the various alternatives. The analysis and identification of potential hazards within the study area of alternative corridors and alignments is useful in comparing overall system

alternatives and in identifying areas where avoidance may be possible in subsequent project-level review. At this program level of analysis, the analysis of Hazardous materials did not result in any differentiation between HST alignment options.

Figure 3.11-1 has been revised in the Final Program EIR/EIS to reflect all of the SPL listings identified in the Appendix 3.11-A.

Section 3.11 presents the analysis of Hazardous Materials and Wastes at an appropriate level of detail to compare the system alternatives.

0056-11

Please see the technical studies for cultural resources (Cultural Resources, Historic Architecture, and Cultural Resources, Archeology) for this study region. These technical reports, prepared for five regions of the Program EIR/EIS study area, served as supporting information for the Draft Program EIR/EIS. The reports are available for review on the California High Speed Rail Authority website:

http://www.cahighspeedrail.ca.gov/eir/regional_studies/default.asp

and have been incorporated in the Final Program EIR/EIS by reference. The reports describe the methods for evaluation, the APE, the data sources, summary listings of cultural resources, sensitivity evaluations, significance criteria, comparisons of alternatives and options. Based on the information in the Program EIR/EIS and the public comments on this document, the Authority has identified the SR-58/Soledad Canyon alignment option as preferred for the Bakersfield to Los Angeles segment. Please see standard response 3.15.11 regarding this decision.

Various elements of the Impact Sciences' comments relate to the adequacy of the methodology employed for identifying potential Project impacts to cultural and paleontological resources. While other methods (e.g., intensive archaeological surveys, comprehensive historic architectural surveys, subsurface testing and evaluation, archival research, etc.) would be required and will be

applied if the decision is made to proceed with the proposed HST system, such intensive studies to identify specific Project effects are neither appropriate nor required for a Program EIR/EIS. In this Tier 1 document, the overall magnitude of potential effects of the Project are considered, as are the relative sensitivities of different Project alternatives (i.e. different modes and different routes). The level of analysis conducted during preparation of the Tier 1, Program EIR/EIS is appropriate for Tier 1 but insufficient to satisfy legal requirements (applicable for Tier 2) under the NEPA, CEQA, and the National Historic Preservation Act (NHPA) that mandate disclosure of specific Project effects on historic properties. That, however is not the intent of this Tier 1 document, a Program EIR/EIS.

The Federal Railroad Administration (FRA) and California High Speed Rail Authority (Authority), serving as lead agencies, respectively, for federal (NEPA/NHPA) and state (CEQA) compliance, are well aware that methodologies adopted for the Tier 1 document do not conform to "common practices", typically employed for identification of National Register-eligible properties and project-specific effects to those. Given the scope (statewide) and complexity (multiple alternatives) of the possible undertaking, however, the FRA and Authority have chosen, appropriately, to implement a phased identification effort, as provided for in Section 106 of the NHPA consultation regulations:

"Where alternatives under consideration consist of corridors or large land areas, or where access to properties is restricted, the Agency Official may use a phased process to conduct identification and evaluation efforts (36 CFR 800.4(b)(2))."

The system Alternatives, meet the above criteria. It consists of multiple potential corridors, covering large stretches of land, and areas of restricted access. To employ "common practice" of conducting intensive archaeological survey, historic structure evaluation, and NRHP-evaluation for all alternatives in this early phase of concept design would be inappropriate, unreasonable, and not practical. However, the FRA and Authority initiated consultation with the California State Historic Preservation Officer (SHPO) in November 2002 (see Appendix 3.12-A of the draft EIR/EIS) to gain

concurrence for the phased identification effort for historic properties. Similar consultation with the SHPO occurred in February 2003 (Appendix 3.12-A) to gain concurrence on a definition of the Area of Potential Effect (APE) that would guide the preliminary sensitivity evaluations of Project alternatives during the Program EIR/EIS studies.

Most importantly, invocation of the provisions of 36 CFR 800.4(b)(2), does not absolve the FRA and Authority from requirements for identifying potential impacts of the Project on NRHP-eligible or Traditional Cultural Properties. As identified in the SHPO consultation letters and in the Program EIR/EIS, those obligations will be fulfilled when it is possible to define specific potential impact areas for the proposed HST system alignments and facilities. Potential effects to historic properties and Traditional Cultural Properties that may occur during Project implementation will be disclosed fully, as will resolution of or mitigation to those effects, in a series of Tier 2 environmental documents.

Specific Issues

Method of Evaluation of Impacts: To evaluate the relative sensitivity of various Project alternatives, a number of methodologies were employed at the Program level to extrapolate from the limited "known" universe of potentially NRHP-eligible and Traditional Cultural Properties. These studies included records searches at the California Historical Resources Information System (CHRIS) Information Centers to identify known archaeological resources, landmarks and monuments, and NRHP-listed properties. As well, historical maps and archives were consulted, along with a windshield survey, to characterize the potential for built environment resources with the potential for NRHP-eligibility. This Program-level survey was intended to establish a baseline for evaluation of cultural resource sensitivity of various alternatives, not to enumerate or even estimate the actual number of NRHP-eligible properties on each alternative. That concerted, comprehensive effort will be conducted if and when specific potential build alternatives are identified.

Using the “known” inventory of archaeological sites, NRHP-listed properties, and regional histories, sensitivity rankings for alternative segments were extrapolated. Within the APE, no known Traditional Cultural Properties were reported by the Native American Heritage Commission. Contrary to Impact Sciences’ review of the Draft Program EIR/EIS, the sensitivity rankings were not based, merely, on raw numbers of “known” resources; those were considered as a proxy baseline. “Rankings considered the number of known sites per mile, accounting for the percentage of each segment that had been subjected to archaeological survey in the past” (Bakersfield to Los Angeles Region Cultural Resources Technical Evaluation, 2004:35). As well, the rankings gave further weight to “sites listed on the National Register of Historic Places, or designated California Landmarks, or that the APE contains sites known or reported to contain human remains” (*ibid.*:36). Furthermore, the proxy value of “known” archaeological resources was refined to consider the likelihood of encountering resources in areas that had not been surveyed (e.g., proximity to water and other resources, flat, habitable land, etc.), as well as those that had been surveyed, but may still contain previously unidentified buried archaeological sites.

Area of Potential Effect (APE): Identical APE widths were not evaluated for each alternative. The APE was explicitly identified, in consultation with the SHPO, to account for the potential for impacts to historic properties for each alternative (geographic and modal). While the varying APE widths do not result in “equal” analyses of number of cultural resources potentially occurring along each segment, they do accurately reflect the potential for adverse impacts along each segment. An alternative with a build scenario that requires take of 500 ft will obviously impact more resources than an alternative requiring only 100 ft of take; the cultural resources analyses consider these differences, and therefore, are not strictly comparable. The APE definitions and alternatives maps and descriptions aptly clarify the corridors that were considered for each alternative.

Fort Tejon: The presence of Fort Tejon in the I-5 Route between Grapevine and Frazier Park has been fully considered in both the

cultural resources impact analysis and the 4(f) analysis. It is a recognized NRHP site, as well as a State Park and State Historic Landmark. The oversight of a specific reference to Fort Tejon in the Kern County historical context is duly noted. While the tabulations in the baseline proxy values for cultural resources do not specifically name Fort Tejon (or any other specific resource), the tally of sites (*ibid.*: 36) indicates Fort Tejon’s status as a National Register-listed property. Sensitivity rankings explicitly considered this special status.

For the Modal Alternative, the analysis in the Cultural Resources Technical Evaluation states that “The presence of Fort Tejon, Tejon Ranch, Rose Stage Station and associated stage road, and the Sebastian (Tejon) Indian Reservation within or near the APE, suggests that there is an unknown but perhaps high potential to find historical archaeological sites from the Hispanic to American Transition Period (1848-1870) in the I-5: Tehachapi Crossing APE” (*ibid.*: 38). This high sensitivity, though, is somewhat offset by steep terrain in much of the APE for this corridor, suggesting low potential to locate previously unknown prehistoric sites. For the HST Alternative, however, the I-5: Tehachapi Crossing Corridor passes several miles east of Fort Tejon State Historical Park, avoiding the National Register location. As well, large portions of this route will be in bored tunnel, also reducing impacts to cultural resources (*ibid.*: 40).

High-Speed Train Alternative, SR-58/Soledad: The reviewer has confused the “Antelope Valley segment” of the SR-58/Soledad alternative with the composite of three segments of this alternative: SR-58 Corridor, plus Antelope Valley Corridor, plus Soledad Canyon Corridor. The only apparent discrepancy in the tabulations and summaries is a typo on Table 4.0-1 in the Technical Evaluation report, where 120+ sites for the Antelope Valley Corridor should read “20+”. Thus, while many of the Antelope Valley sites are historical trash scatters (NRHP-eligibility as yet unknown), sites in the other segments of the SR-58/Soledad Alternative are prehistoric.

High-Speed Train Alignment Comparisons: The summary of potential sensitivity for various alternatives on pages 3.12-22 and -

23 accurately summarizes the very complex set of analyses conducted for each segment of each alternative. The reviewer is advised to use the Cultural Resources Technical Evaluation report, in which analyses (archaeological and historical) are detailed for each segment of each alternative, if the summary is too distilled for clarification of particular issues.

Cultural Resources Technical Report: Additional Chumash and Kawaiisu tribal territories could be added to the map on page 15, but at the Program-level, this more expansive approach would serve no purpose. Letters were sent to all 101 individuals and groups identified by the Native American Heritage Commission as having potential concerns or information about archaeological sites or Traditional Cultural Properties along the general project alignments. This list had no direct concordance to approximate tribal territories shown in Figure 2.2-1.

Paleontological Resources Technical Evaluation: Because the relative impacts to paleontological resources for surface disturbance versus tunneling will never be quantifiable, this Program-level EIR/EIS analysis does not make the distinction. Instead, for all corridor alternatives, ALL potentially fossil bearing rock and sediment units are analyzed.

0056-12

The Co-lead agencies respectfully disagree with the assertion that the rating system for comparing potential geologic impacts is misleading. On the contrary, identifying the length, percentage of length, and general severity of potential impacts along a particular alignment option allows for comparison of alignment options with varying lengths between the same segment endpoints, and is appropriate for this program-level review. Specific aspects of the severity of each geologic impact or constraint cannot be determined until subsequent project specific analysis, based on more precise information regarding location and design and construction of the facilities proposed (e.g., elevated, at-grade, earthwork required, etc.). The detail of engineering associated with the project level environmental analysis will allow the Authority to further investigate

ways to avoid, minimize and mitigate potential geologic impacts. After the alignment is refined and the facilities are fully defined through project level analysis, geologic exploration is conducted, and avoidance and minimization efforts have been exhausted, specific impacts and mitigation measures will be addressed.

The Difficult Excavation rating for HST and highway alignment options is based on the percentage of surface segments in hard rock plus the percentage of tunnel segments with fault zones. According to this methodology the ratings for the I-5 and SR 58 alignment options are correct. Tunneling is typically more difficult in varying media as compared to homogenous media, even if it is hard rock.

The Geology and Soils Section (3.12) and the associated appendices provide a full listing of affected environment and environmental consequences (impact ratings for various categories of comparison) for each alignment option in each segment of the region. The co-lead agencies disagree with the commentor's assertion that the Section is confusing and unclear.

0056-13

Please see the technical study for hydrology and water quality for this study region. These technical reports, prepared for five regions of the Program EIR/EIS study area, served as supporting information for the Draft Program EIR/EIS. The reports are available for review on the Authority's website:

http://www.cahighspeedrail.ca.gov/eir/regional_studies/default.asp

and have been incorporated in the Final Program EIR/EIS by reference. The report describes the methods for evaluation, the summary of impacts, and a comparison of the alternatives and options. The Co-lead agencies believe that the impact analysis evaluation procedures used were appropriate for the Program level EIR/Tier 1 EIS. Please also see standard response 3.15.13. Additional hydrological resource evaluation will occur as part of the project-level, Tier 2 studies. Based on the information in the Program EIR/EIS and the public comments on this document, the Authority has identified the SR-58/Soledad Canyon alignment option

as preferred for the Bakersfield to Los Angeles segment. Please see standard response 3.15.11 regarding this decision.

The Co-lead agencies believe that the impact analysis evaluation procedures used in the analysis were appropriate for the Program level EIR/Tier 1 EIS. See also response to Comment 0042-1. Additional hydrological resource technical analysis will occur as part of the project-level, Tier 2 studies.

Based on the information in the Program EIR/EIS and the public comments on this document, the Authority has identified the SR-58/Soledad Canyon alignment option as preferred over the I-5 alignment option for the Bakersfield to Los Angeles segment. Please see response to Comment 0012-22 regarding this decision.

Section 2.2.2 does reflect current CDFG stream alteration regulations.

The last sentence of Section 2.3.1 Lakes should read "For the HST Alternative, the majority of acreage occurs along the undeveloped portions of the I-5/Grapevine routes."

The last sentence of section 2.3.2 Streams should read "For the HST Alternative, the majority of rivers/streams occurs along the undeveloped portions of the SR-58/Antelope Valley and I-5/Grapevine routes."

Section 2.3.4, Groundwater. The aquifers are discussed in Section 4.2 of the Hydrology Technical Report. This Section also includes figure 4.2-2 illustrating the locations of the various aquifers.

0056-14

General Comments

As stated in Section 1.1 (Introduction) on page 1-2 of the Program EIR/EIS, "The FRA... determined that the preparation of a tier 1, program-level EIS for the proposed HST system is the appropriate NEPA document because of the comprehensive nature and scope of the HST system proposed by the Authority and the conceptual stage of planning and decision-making. ... The Authority has determined

that a program EIR is the appropriate CEQA document for the project at this conceptual stage of planning and decision-making, which includes identifying a preferred corridor and station locations and identifying options for phasing the development of the new system. No permits will be sought in this phase of the environmental review. If the HST alternative is selected at the conclusion of the Program EIR/EIS, project development will continue with project-specific environmental documentation to assess in more detail the impacts of reasonable and feasible alignment and station options in segments of the system that are ready for implementation." Page 1-3 goes on to state that, "...the level of detail provided in the [program- and project-level] documents differs substantially because a program-level document analyzes a general conceptual design of the proposed program and alternatives rather than providing detailed analysis of a specific project proposal. ... A program EIR/EIS is an informal document intended to analyze and to disclose to the public and to public decision-makers the environmental effects and benefits of a proposed program and its alternatives. ... It is intended that other federal, state, regional, and local agencies use the Program EIR/EIS to review the proposed program and develop expectations for the tier 2, project-level environmental reviews that would follow should the HST alternative be selected." Please also see standard responses 3.15.2, 3.15.3, 3.15.7, and 3.15.13.

The level of analysis provided in Section 3.15 (Biological Resources and Wetlands) is appropriate for this program-level review. All Alternatives were analyzed using the most accurate and up to date data available including the GAP analysis, CNDDDB, NWI and USGS topographic maps. Limitations in the data sources are recognized and disclosed in Section 3.15.1 B (Method of Evaluation of Impacts) in the EIR/EIS and in Appendix 3.15-C. All Alternatives were analyzed using the same methodology and data sources.

Specific Comments

Study Area: As stated in Section 3.15.2 A (Study Area Defined), on page 3.15-4, in the EIR/EIS, the study area for the Bakersfield to Los

Angeles "region was 0.5 mi (0.8 km) on either side of the highway and rail corridors and around stations." Although the 1,000-foot study area in urbanized areas and 0.25 mi study area in undeveloped areas was not used, the 0.5 mi study area encompasses these study areas and therefore impacts within these study areas are accounted for. The criteria used to address urbanized, undeveloped and sensitive are provided on page 82 of the Biological Resources Technical Evaluation. Developed areas included urban and rural infrastructure, excluding agriculture; undeveloped areas included agriculture and other undeveloped areas; and, sensitive areas included lagoons, estuaries, marshes, wildlife conservation areas, or wildlife sanctuaries.

Data Sources: The GAP analysis and CNDDDB were determined to be the best available information for the analysis. These sources were considered adequate for the purposes of the program level document as described above. Section 3.15.1 B (Method of Evaluation of Impacts) and Appendix 3.15-C disclose the limitations of these sources. To the extent possible, the investigators used the best available information that could be applied to the geography and expanse of the study area with the underlying objective; to compare alternatives to a similar level of detail. Considering the expanse of the study area and the program level phase of the process, existing data could not be verified in the field and may have resulted in some bias at certain locations where field investigations did occur versus in those areas where they were not conducted.

Jurisdictional Waters: The NWI and USGS topographic maps were determined to be the most accurate and up to date resources available for analysis. These sources were considered adequate for the purposes of the program level document as described above. Section 3.15.1 B (Method of Evaluation of Impacts) and Appendix 3.15-C disclose the limitations of these sources. The impacts assessment methods were also disclosed on pages 82 and 83 of the Biological Resources Technical Evaluation. While the NWI was the primary data source used in the regional wetlands analyses, The Draft Program EIR/EIS acknowledged that the NWI contained some gaps in information. The next best data source to research for

streambeds and wetlands are the USGS quadrangle maps for those gap areas. Using the USGS quadrangle maps is a reasonable source to determine the likelihood of streambeds and provides relative information for each alternative considered. The USGS maps are often consulted in the initial stages of environmental assessment research to identify the likely location of such resources as wetlands and streambeds. As indicated on page 81, the location of the blue-line streams were further researched and confirmed by the interpretation of current aerial photography. This level of effort is reasonable for each alternative given the programmatic level of the document.

It is important to recognize that the impact analysis included linear feet of impact for presumed non-wetland waters for the entire corridor. The acreages for wetlands, derived from the NWI, were specifically for wetlands and were not added to the total for the streambeds, calculated in linear feet. Consequently, because the numbers were not added together, the resources were not counted twice.

A program-level environmental document should provide sufficient relative detail to assess and compare the potential environmental consequences of each alternative considered. A program-level document is not used to permit a project and is not a project EIR or construction-level EIR. Detailed protocol survey or delineations are not appropriate at this level of analysis, particularly considering the specificity and certainty of the engineering and project description information available. It is anticipated that the program-level document provides decision makers with a comparative evaluation with the understanding that a subsequent document will address the proposed project to a level of detail consistent with the protocol needed to obtain relevant permits from state and federal agencies. The methods used for the Program EIR/EIS were defined with this tiered approach in mind.

Methods of Evaluation: Section 3.1 (Data Collection), page 81, of the Biological Resources Technical Report states which USGS quadrangles were not available as NWI maps.

Affected Environment: As stated in Section 1.1 (Introduction) on page 1-2 of the Program EIR/EIS, the HST program is in the “conceptual stage of planning and decision-making.” The ROW is not known with specificity and modifications to the general alignments are likely during the various stages of route alignment, planning and future design. A 0.5-mile buffer allows the decision-makers some appropriate flexibility when making alterations within this buffer. Also stated in Section 1.1, on page 3.15-3, of the Program EIR/EIS, “the identification of a potential impact on a specific resource is intended to be conservative and in some instances may be an overstatement, because neither habitat that is sensitive on species of concern may be found in or near the footprint of the proposed corridor or actual alignment.” This overestimate of resources occurs along all alternatives. Quantification of the overestimation of impacts for each alternative would require a detailed analysis and field verification that, as previously stated, is inappropriate for this level of documentation.

Comparison of Alternatives by Region: Bakersfield to Los Angeles: The names and status of federal and state listed threatened and endangered species are provided in the Biological Resources Technical Report. The CNDDDB was considered the most accurate and up to date source of information available for analysis. Section 3.15.1 B (Method of Evaluation of Impacts) and Appendix 3.15-C disclose the limitations of the CNDDDB. As previously stated, the level of analysis provided in Section 3.15 (Biological Resources and Wetlands) is appropriate for program-level of documentation. Detailed analysis of potential impacts will be provided in a project level document, or some form of subsequent analysis.

Spoil locations and their corresponding impacts to biological resources will be evaluated in the subsequent level of analysis. It is likely that spoil locations will be limited to disturbed or non-native conditions to minimize impacts to the natural environment. However, these specifics will be addressed in the more precise construction-level document. The same applies to dewatering, tunnel feasibility and methods of construction will be addressed to

help ensure springs and watercourses are not appreciably impacted and likely monitoring and contingency mitigation would apply.

Potential streambed impacts are provided in linear feet because an estimate of the acreage would require field verification of the widths of all waters. This detailed level of analysis and field verification is not required because, as stated in Section 1.1 (Introduction) on page 1-2 of the Program EIR/EIS, “No permits will be sought in this phase of the environmental review.” To conduct detailed field investigations to ascertain specific acreages for waters is not reasonable, appropriate, or necessary at this time and would result in speculative estimates considering the data that is available. Delineation of waters and wetland will be conducted for those alignment alternatives that are moved forward in the planning process and are considered to be potentially practicable consistent with the Clean Water Act permitting process. For this analysis, linear feet are a more reasonable measuring parameter and are used, to the extent feasible, consistently for each alternative. This approach provides a relatively consistent method across the alternatives for comparative purposes. Please see discussions of “design practices”, and mitigation strategies in Chapter 3 and construction methods in Section 3.18 of the Final Program EIR/EIS.

The disparity in the Draft Program EIR/EIS between the linear feet of non-wetland waters (streambeds) reported in the Biological Resources section and the linear feet of streams reported in the Hydrology and Water Resources Section can be explained by the use of different study area widths used to calculate impacts along the various Alternatives. As stated in Section 3.14.2 A (Study Area Defined), the study area for hydrology and water quality resources “is defined as 1) the area within 100 ft (30 m) of the centerline of the proposed HST Alternative alignments and within 100 ft (30 m) of the direct footprint of the proposed station facilities; and 2) the area within 100 ft (30 m) of the Modal Alternative direct corridor footprint and direct footprints of facilities, including corridors and facilities that would undergo upgrades/expansions.” As stated in Section 3.15.2 A (Study Area Defined), the potentially affected area for the Bakersfield to Los Angeles “region was 0.5 mi (0.8 km) on either side

of highway and rail corridors and around stations.” The potentially affected area for biological resources is much larger than the study area for hydrology and water resources therefore the impacts to non-wetland waters/streams calculated in the biological resources section were much larger than those in the hydrology and water resources section. LEDPA for Waters of the U.S.: As stated in Section 1.1 (Introduction), on page 1-2, of the Program EIR/EIS, “No permits will be sought in this phase of the environmental review.” Therefore, the level of detail and analysis required for a LEDPA determination is not required within this document.

A program-level environmental document should provide sufficient relative detail for each alternative for comparison purposes in determining the potential environmental consequences of each considered. A program-level document is not used to permit a project and is not a project EIR or construction-level EIS. Detailed protocol survey or delineations are not appropriate at this level of analysis, particularly considering the specificity and certainty of the engineering and project description information available. It is anticipated that the program-level document provides decision makers with a comparative evaluation with the understanding that a subsequent document will address the proposed project to a level of detail consistent with the protocol needed to obtain relevant permits from state and federal agencies. The methods used for the Program EIR/EIS were defined with this tiered approach in mind.

Additional Comments: The criteria are intended to apply to impacts that may substantially impact a population, to the extent, that the numbers and genetic variability would potentially be at risk.

The Draft of Final Tejon Corridor HCP and other appropriate documentation will be analyzed in relation to the proposed plan/project at the project level.

Biological Resources and Wetlands Technical Report

Biological Resources General Comments: As previously stated, the level of analysis provided in Section 3.15 (Biological Resources and Wetlands) is appropriate for this level documentation. The limitations of the data sources used (which account for both gaps

and overestimations of impacts within the analysis) were disclosed in Section 3.15.1 B (Method of Evaluation of Impacts) of the Program EIR/EIS. A detailed study and field verification of all available data will be conducted and the exact nature and quantification of impacts including acres of wetlands and waters, acres of critical habitat and numbers/acres of state and federally listed species and habitats will be disclosed in the project-level document should the Authority decide to proceed with a HST Alternative.

Wildlife Movement/Migration Corridors: As stated in Section 1.1 (Introduction) on page 1-2 of the Program EIR/EIS, the HST program is in the “conceptual stage of planning and decision-making.” The ROW is not known with specificity and modifications to the general alignments are likely during the various stages of design. It is also anticipated that minor modifications can be made to the alternatives to avoid potentially significant impacts to wildlife movement. In combination with these modifications, a detailed mitigation and monitoring plan for significant impacts will reduce impacts to wildlife movement, although at this stage of planning it is too speculative to address due to the level of engineering currently available. Regardless some mitigation strategies related to wildlife movement are discussed in Section 3.15.5, on pages 3-15-30 and 3.15-31, in the Program EIS/EIR. Also see Section 3.15 regarding systemwide consideration of wildlife corridors, which has been added to the Final Program EIR/EIS. On page 82 of the Biological Resources Technical Evaluation, it states “Impacts to regional wildlife movement/migration corridors identified in the California Wilderness Coalition 2000 report were determined by noting which corridors are crossed by a segment and the planned construction type for the crossing.” The analysis did not intent to go into detail about specific local movement patterns; such as the ones described in the comment, but did discuss the crossing of the particular corridor with the linkage. The crossing of a linkage represents a potential barrier to wildlife movement. Localized dispersion corridors, existing bridges, culverts or engineering barriers were not considered in the analysis at this stage of environmental planning. Certainly, at a construction level of environmental documentation and during the future permitting processes, specific movement patterns, land use

considerations, regional open space plans and detailed discussions pertaining to wildlife fencing, funneling movement to crossings, fencing location and specifications, wildlife habitat replanting, bridges, culverts and nighttime lighting will all be considered.

Section 3.2 Significance Criteria for Biological Resources: The significance criteria in Section 3.2 (Significance Criteria for Biological Resources) are consistent with those in Section 3.15.1 C (Significance Criteria for Biological Resources) in the Program EIS/EIR. Criteria points one and two in the Technical Report have been incorporated as point one in the Program EIS/EIR. Criteria point three in the Technical Report has been incorporated as point two in the Program EIS/EIR. Criteria point four in the Technical Report has been incorporated as points three, four and five in the Program EIS/EIR.

Section 3.3 Impacts Assessment: With the steel liner, it is probable and appropriate to assume that tunneling will have limited impacts on groundwater or dewatering of surface waters, resulting in substantive impacts to groundwater dependent vegetation.

The comment cites the MWD Inland Feeder tunneling project. As a point of clarification, the Inland Feeder Project is located in the San Bernardino National Forest, not the Cleveland National Forest. The EIR/EA for the Inland Feeder Project had a very comprehensive mitigation monitoring program, including extensive water quality and groundwater monitoring protocol that defined the groundwater baseline prior to construction, instituted surface water flow

measurements and later provided extensive biological monitoring throughout the mountain range to report on any anomalies during construction. The monitoring program did identify one location where dewatering had an influence on the riparian reach and contingency measure was triggered to sustain the biotic components at this one location. During this same time frame MWD ceased mining and supplemented the design with a new tunnel boring machine and lining technique to avoid substantive groundwater intrusion into the tunnel. Similar technology can be used during HST tunneling to avoid these impacts as well. In the event that these impacts are anticipated in project-level reviews, appropriate mitigation and monitoring will be required and implemented.

Section 4.2 Modal Alternative: Refer to the response to "Biological Resources General Comments" above.

O056-15

See Standard Response 3.17.1

O056-16

Please see standard response 5.2.4.